

(12) **United States Patent**  
**Mostovoy**

(10) **Patent No.:** **US 10,065,113 B1**  
(45) **Date of Patent:** **Sep. 4, 2018**

(54) **VIRTUAL REALITY SYSTEM WITH  
ENHANCED SENSORY EFFECTS**

(71) Applicant: **Gary Mostovoy**, Brooklyn, NY (US)

(72) Inventor: **Gary Mostovoy**, Brooklyn, NY (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

2012/0229699 A1\* 9/2012 Mate ..... H04N 5/2256  
348/370  
2013/0160195 A1\* 6/2013 Clement ..... A42B 3/286  
2/437  
2014/0333450 A1\* 11/2014 Savage, Jr. .... G08B 5/38  
340/815.45  
2014/0333773 A1\* 11/2014 Davis ..... H04N 5/2252  
348/158  
2016/0171739 A1\* 6/2016 Anderson ..... G06T 11/60  
345/633

(21) Appl. No.: **14/998,696**

(22) Filed: **Feb. 3, 2016**

#### Related U.S. Application Data

(60) Provisional application No. 62/176,022, filed on Feb. 6, 2015.

(51) **Int. Cl.**  
**A63F 13/285** (2014.01)  
**G06T 19/00** (2011.01)  
**G06F 3/01** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **A63F 13/285** (2014.09); **G06F 3/016**  
(2013.01); **G06T 19/006** (2013.01)

(58) **Field of Classification Search**  
None  
See application file for complete search history.

(56) **References Cited**

#### U.S. PATENT DOCUMENTS

8,113,517 B2\* 2/2012 Canterbury ..... G07F 17/32  
273/138.1  
9,478,067 B1\* 10/2016 Worley, III ..... G06F 3/016  
2008/0054561 A1\* 3/2008 Canterbury ..... G07F 17/32  
273/148 B  
2008/0059138 A1\* 3/2008 Tremblay ..... G06F 3/011  
703/11  
2009/0276940 A1\* 11/2009 Sallee ..... A42B 3/24  
2/435

#### OTHER PUBLICATIONS

Author: Alex; Title: "FeelReal VR Mask will be available this summer for Virtual Reality", Mar. 15, 2015, source: <http://riftinfo.com/feelreal-vr-mask-will-be-available-this-summer-for-virtual-reality>.\*

Author: Oculus VR, LLC; Title: "DK2: Development Kit 2—Quick Start Guide", Jul. 25, 2014, source: [https://static.oculus.com/sdk-downloads/documents/Oculus\\_Rift\\_DK2\\_Instruction\\_Manual.pdf](https://static.oculus.com/sdk-downloads/documents/Oculus_Rift_DK2_Instruction_Manual.pdf).\*

\* cited by examiner

Primary Examiner — Jwalant Amin

(57) **ABSTRACT**

A virtual reality (VR) system is implemented as a "feel-real" mask attached to standard VR goggles or as a helmet having an integrated feel-real mask and 3-D goggles. A video stream or a video game is rendered to a user via the 3-D goggles from a mobile device or from a PC over a wireless communication channel. The video stream or the video game code has a plurality of inserted markers indicating feel-real sensory events corresponding to the content of the video or the video game. A feel-real player reads the markers and triggers the events, including a stream of warm or cold air, a water mist (or a spray), vibrations and various smells. Thus, the VR system appeals to different user senses apart from traditional ophthamoception and audioception (i.e., audio and visual) senses and creates enhanced virtual user experience while watching a movie or playing a game.

**13 Claims, 3 Drawing Sheets**

